intStream
a Europower company

E² release: Spring 2010

New features

- *New powerful **MS Excel Import** tool*
- ***Print** your screens as PDF or Excel documents*
- *Increased support for **spot-market** operations through Physical Data –component*

New data

- ***Consumption forecasts** for tomorrow*
- ***Danish Wind power estimate***
- ***Capacity forecasts and incident explanations***
- ***Spot sales, purchase and transfer volumes***

New analysis

- ***Moving maximum***
- *Moving minimum*
- *Moving median*
- *Year and quarter averages and sums*
- *More efficient way to build **custom forward curves** through value from series analysis*

<u>In addition:</u>
User manual for the new functions

News on feed updates: E² runs on new Nord Pool Spot feed starting March 2010

Also in this version release: Improved DDE engine and updated Fundament Predictor models

New screen views in "Report Templates" folder.

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E2

IntStream newsletter
17th of March 2010

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Further steps towards business critical systems

After a long period of quiet stability we have released new features to E². The new E² release presents some of our ideas to management reporting and information management. IntStream has acted as a system provider to the Nordic power market since 2003 and our strategy has leaned to the same corner stones: leader in technology, excellence in customer service, focus to Nordic power market and a controlled growth within the customer's value chain. This combination has served our customers rather well and we have been capable of offering our focused high-end know-how in a close cooperation. As a business partner we are now more credible: our sales has boosted many fold, our ownership is more stable and the company itself is moving towards long-term profitability. However, our modus operandi craves continuous innovation and renewal, which can be detected from the development of our services.

Our first generation market information system *E.R.T entailed all of our concepts on what a great market information system should be like. It would have to be real time system while still maintaining access to historical time series database.* Managing and using time series data would have to be very flexible and market screens customizable. System should support decision making process ie. provide us clear view on previous market development, complete understanding of the current market situation and where we are likely heading towards.

As a concept E.R.T worked fine and achieved great market penetration in short time. In three years the system was in use on every third power company in Finland. In our

target group, the middle to large sized power companies, we had been accepted by everybody. Based on the customer feedback as well as a decision to establish a Scandinavian presence for the company we decided to further develop the product. The idea on developing a faster platform that supports more demanding analysis created also a need for a second generation platform.

The second generation technology E2 managed to meet the new requirements: we multiplied the number of available analysis calculations, introduced a graphical editor for building analysis content, enabled back testing and live DDE links to MS Excel. Screen files with some dozen screens were opened in the same time than the one screen in the old E.R.T. We incorporated new data content and made available alternative weather data from various providers. Reliability of the service benefitted from the change of technology and primed at having only two occurrences of downtime within a year.

Our third generation technology has enabled us to extend our product offering more towards business critical applications. During the last 2,5 years, Intstream has focused on developing a state-of-the art modern trading and risk management application E2 ETRM. In this we have put special emphasis on flexibility of the calculations as well as having exceptional web based reporting functions.

During this development phase we also showed the first light to a new electricity sales management and offer generation tool E2 NetETRM.

Through these new members of the E2 product family, IntStream is developing from a mere market data vendor towards a full scale partner in financial market services. I believe the E2 ETRM makes not only a good case in showing our ability to meet the demanding needs of our customers but also heightens expectations in general on what a trading and risk management system should do.

Our modern and flexible platform technology combined with agile development model has proven itself in delivering demanding systems implementations in a tight schedule without compromising quality. I think this is the reason why we have so much to show for: new E2 functions, E2 ETRM portfolio management tool, power sales management tool E2 NetETRM and a new version of the E2 Replicator.

Ari Mäkelä
CEO

New E2 Features

MS Excel import

Intended use

All companies generate and store numerous time series that are used in decision making and in analysis supporting the decision making. Data from E²'s data feeds are often needed to make own analysis. Exporting data from E² to Excel-sheets is easy but time series management in spreadsheets may at times be worksome and requires vigilance. E², however, is a powerful tool in time series management and analysis. Hence we made data import to E² easier to enable you to have your own data in analyses within E².

The new import tools enables you to link E² to automatically read time series data as the source file updates and create analysis that is based to your own data and to the data that Intstream provides. You can also publish your time series data to a work group storage, where the data is available to all E² users in your company.

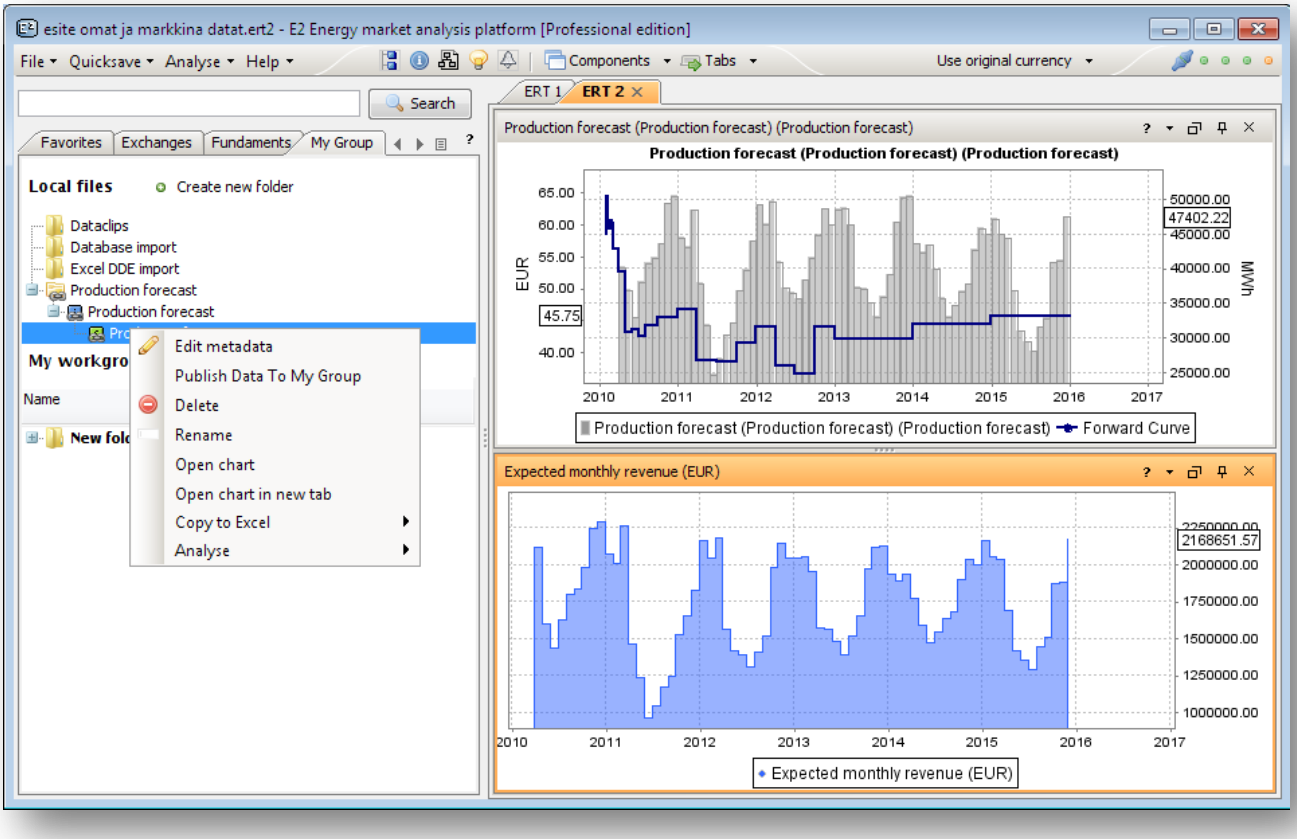


Figure – The imported data is available as all other data in E². It can be analysed, manipulated and monitored as part of your own reports.

Instructions

The MS Excel import tool in E² enables you to create macros, updating links, to your spreadsheets. The spreadsheets may contain multiple datacolumns and the data updates to your E² immediately when the source is updated. To update the data in E² requires that the source file is saved after changes are made or replaced with an updated file that has the same name. These files do not have to be stored to your computer, you can use files stored in network files.

The import tool has been designed to handle the import of roughly one hundred files continuously. The system can handle roughly one thousand imported files that are updated on reguest (manually). If the number of imported files are greater than the aforementioned, we recommend that building an import feed that shall take care of this process independently.

Using your own timeseries

1) Open "Import data" from the submenu "Excel Import" under "File" menu

2) Follow the instructions in the dialog. Note that you can change the unit, accuracy and default renderer of the imported time series in step 2. You can also exclude time series from being imported.

3) Select target folder and instrument to which the file is imported and choose whether the data is updated automatically or manually.

4) You can manage (add and remove) and manually update linked files from the Open "Manage Excel Links" from the submenu "Excel Import" under "File" menu.

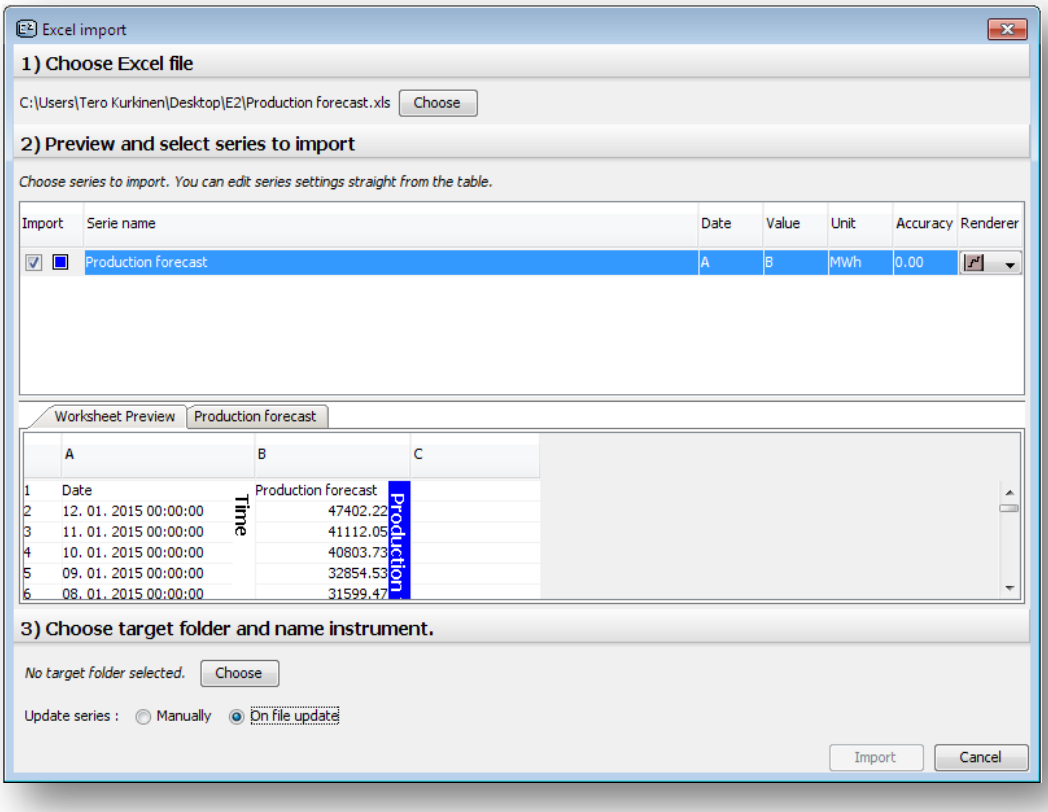


Figure - Configuring Excel import

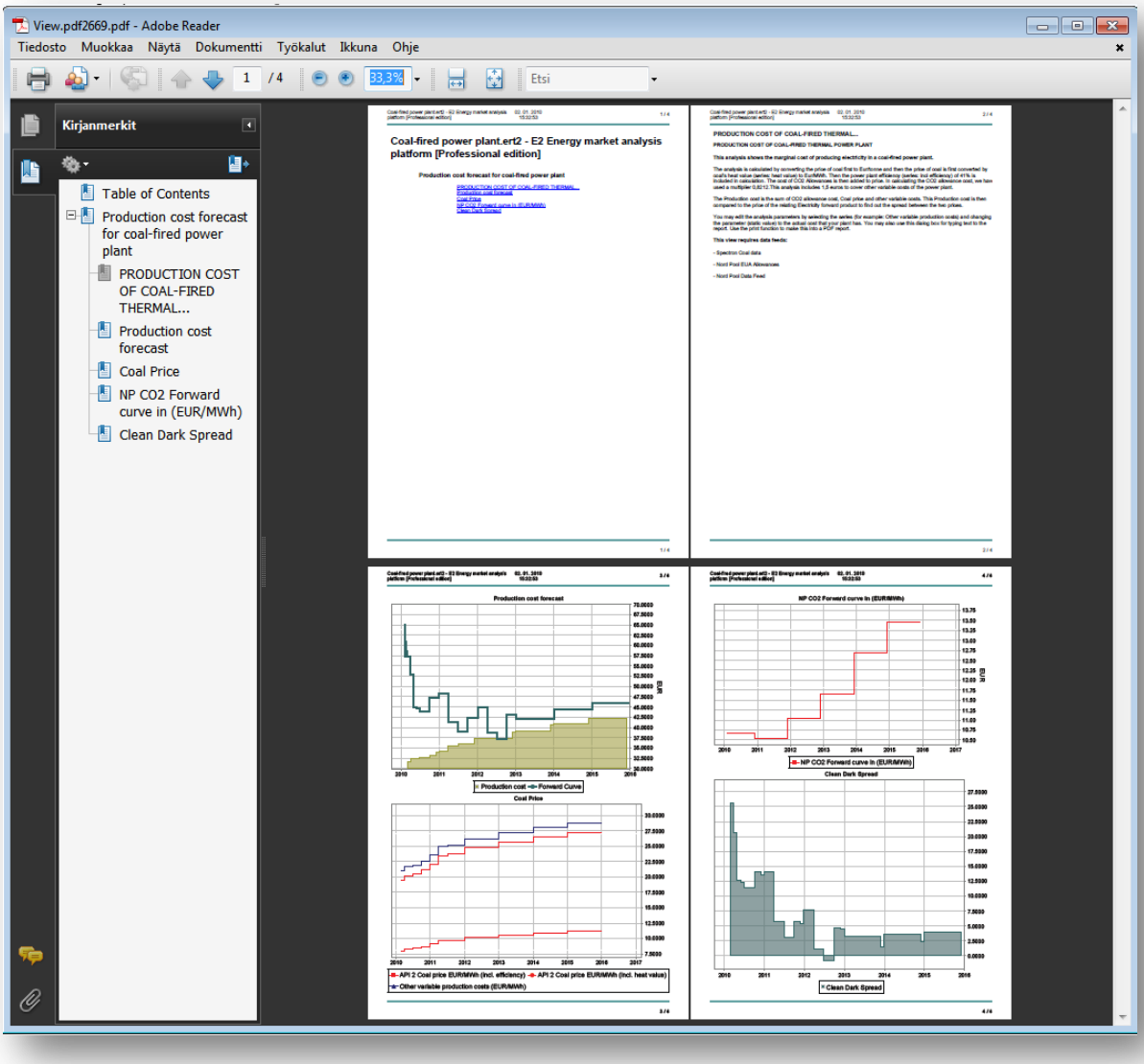
Print funtionality

Intended use

The new print functionality aims to fulfill two different needs;

1) Enabling market reporting in internal and external communication *(For example market reports or reports on hedging performance)* and
2) enabling validation of certain analysis or calculations and the subsequent reporting of these validations rely heavily on spreadsheet models.

Our print function prints PDF and MS Excel-files. PDF-reports can be used to traditional printing, Excel reports can be used to ease further analysis of certain calculations or to delivering analysis in-house. We've included a few examples of these reports to intStream's ready-made views. You can find these examples under Report templates folder.


View.pdf2669.pdf - Adobe Reader
Tiedosto Muokkaa Näytä Dokumentti Työkalut Ikkuna Ohje
Kirjanmerkit
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PRODUCTION COST OF COAL-FIRED THERMAL...
Production cost forecast
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Clean Dark Spread
Coal-fired power plant.ert2 - E2 Energy market analysis platform [Professional edition]

Figure – An example of a PDF report

Instructions

The print function in E² has been designed to printing E² views and tabs to files (excel or PDF). Because the views in E² are primarily designed for effective market analysis and monitoring; the print function in E² works differently than, for example, in conventional text editors. The print function prints all content of different E² components within a tab of view in a predefined format. Due to this any screen that you print must be designed from that perspective (For example Welcome to E² tutorial –view has 5 tabs. The view's printout with standard settings is 22 pages).

The print function can be found from file menu by selecting "Printing". This opens the following dialog.

Print setup:

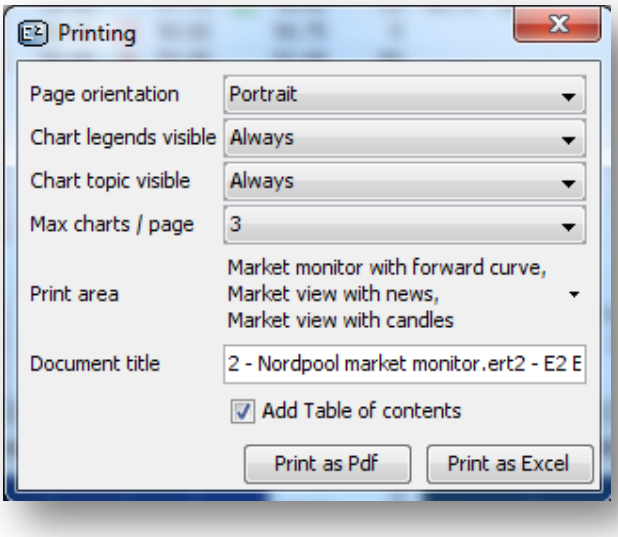


Figure – Print setup defines the outlook of the charts and other content in the generated file "printout".

Page orientation: Select page orientation, options are portrait or landscape.

Chart legend/topic visible: You can choose whether the legends or topics are visible or not regardless of your selections in the E2 view or whether the printout respects your selection (If visible).

Max charts / page: This function concerns PDF printouts only. You can set how many charts you wish to have on a single page at maximum.

NOTE! The aforementioned settings enable you to modify the printout more readable without need to change the view you are using. For example: If the screen you wish to print has charts that contain several time series, the size chart legend may be disproportionally large. By removing legends or by reducing the number of charts per page you can make the report more readable.

Print area: Here you may choose which tabs within this view are printed to the document.

Document title: Rename the header of the PDF-printout.

Add table of contents: In PDF printouts, the table of content makes reading easier. If the document is short you may exclude the table of content as unnecessary.

Tips on printing components:

Market Information-window: Choose only those markets, products and columns that you want to show in the printout by using the tab selector (green plus sign). In case you want to compare prices from multiple markets, use the "Custom List" tab to manage the list of products you wish to show in the printout.

News and RSS: Only those news articles that are opened to a tab are included in the printout.

New E² analyses

We have added a number of new analyses to E².

One of the most revolutionary analysis is the "Last value level" which is specifically designed to be used in building custom forward curves. This analysis enables one using the latest value from a series to use as a parameter in further calculations. Strong example of using this analysis is calculating the production cost for the whole forward curve (see picture on next page). You can find this screen view from the view file group "Report Templates".

List of added analysis calculations:

In Levels analysis:

- Last vlue level

In Comparison functions:

- Moving Maximum
- Moving Minimum
- Moving Median

In sums and averages functions:

- *Quarterly average*
- *Yearly average*
- *Daily median*
- *Weekly median*
- *Ten day median*
- *Monthly median*
- *Quarterly median*
- *Yearly median*

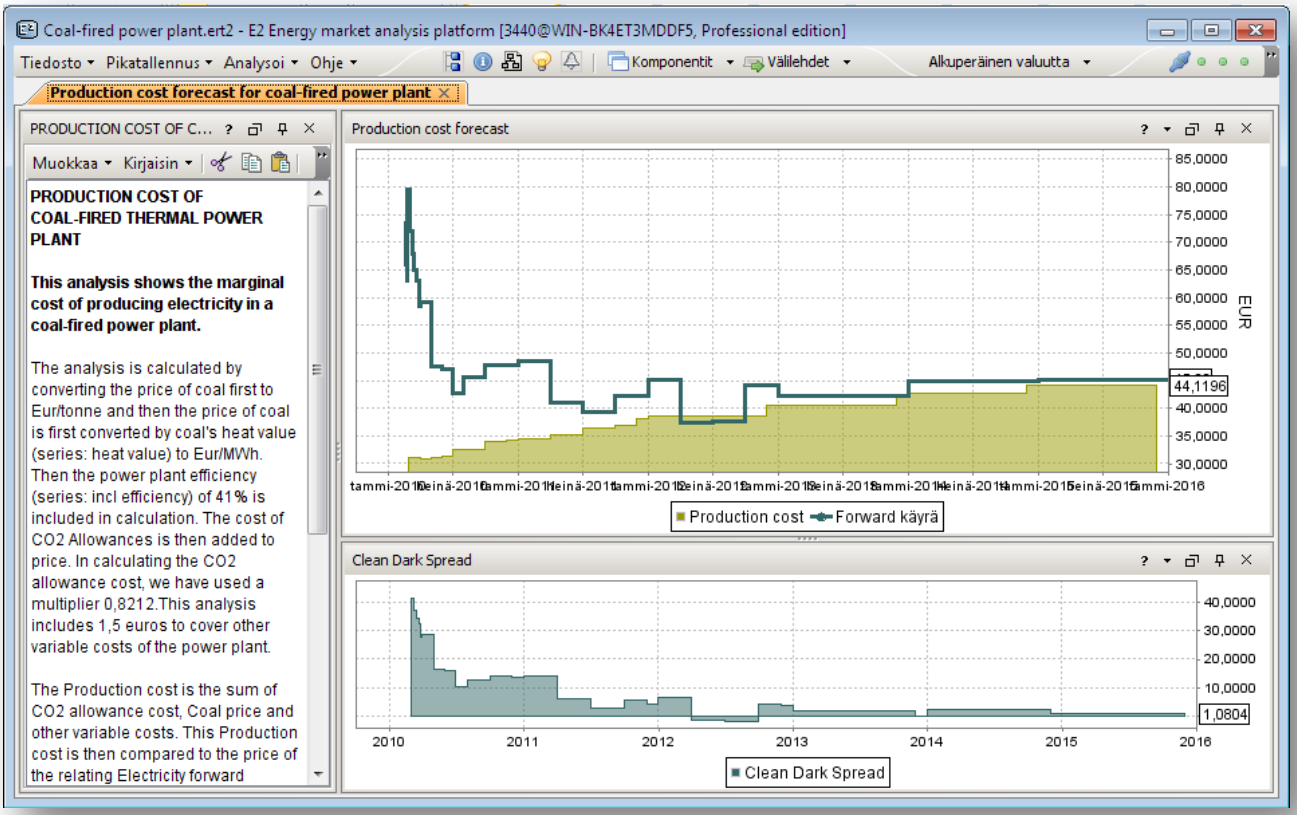

Coal-fired power plant.ert2 - E2 Energy market analysis platform [3440@WIN-BK4ET3MDDF5, Professional edition]
Tiedosto
Pikatallennus
Analysoi
Ohje
Komponentit
Välilehdet
Alkuperäinen valuutta
Production cost forecast for coal-fired power plant
PRODUCTION COST OF C...
Muokkaa
Kirjaisin
PRODUCTION COST OF COAL-FIRED THERMAL POWER PLANT
This analysis shows the marginal cost of producing electricity in a coal-fired power plant.
The analysis is calculated by converting the price of coal first to Eur/tonne and then the price of coal is first converted by coal's heat value (series: heat value) to Eur/MWh. Then the power plant efficiency (series: incl efficiency) of 41% is included in calculation. The cost of CO2 Allowances is then added to price. In calculating the CO2 allowance cost, we have used a multiplier 0,8212.This analysis includes 1,5 euros to cover other variable costs of the power plant.
The Production cost is the sum of CO2 allowance cost, Coal price and other variable costs. This Production cost is then compared to the price of the relating Electricity forward
Production cost forecast
85,0000
80,0000
75,0000
70,0000
65,0000
60,0000
55,0000
50,0000
44,1196
40,0000
35,0000
30,0000
EUR
Production cost
Forward käyrä
Clean Dark Spread
40,0000
30,0000
20,0000
10,0000
1,0804
2010
2011
2012
2013
2014
2015
2016
Clean Dark Spread

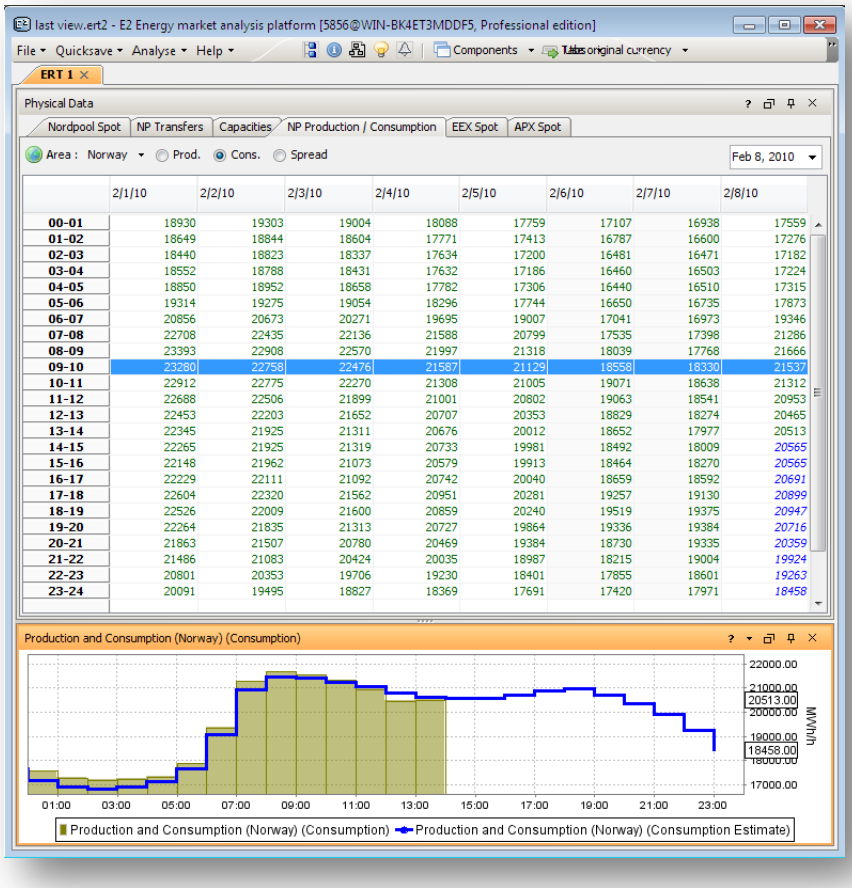
Figure – Clear Dark Spread for the whole market curve

New data from Nord Pool Spot

Nord Pool Spot is renewing their services. Their new service brings forward more data on physical market's current status. We have incorporated most of this data into E² Physical market component.

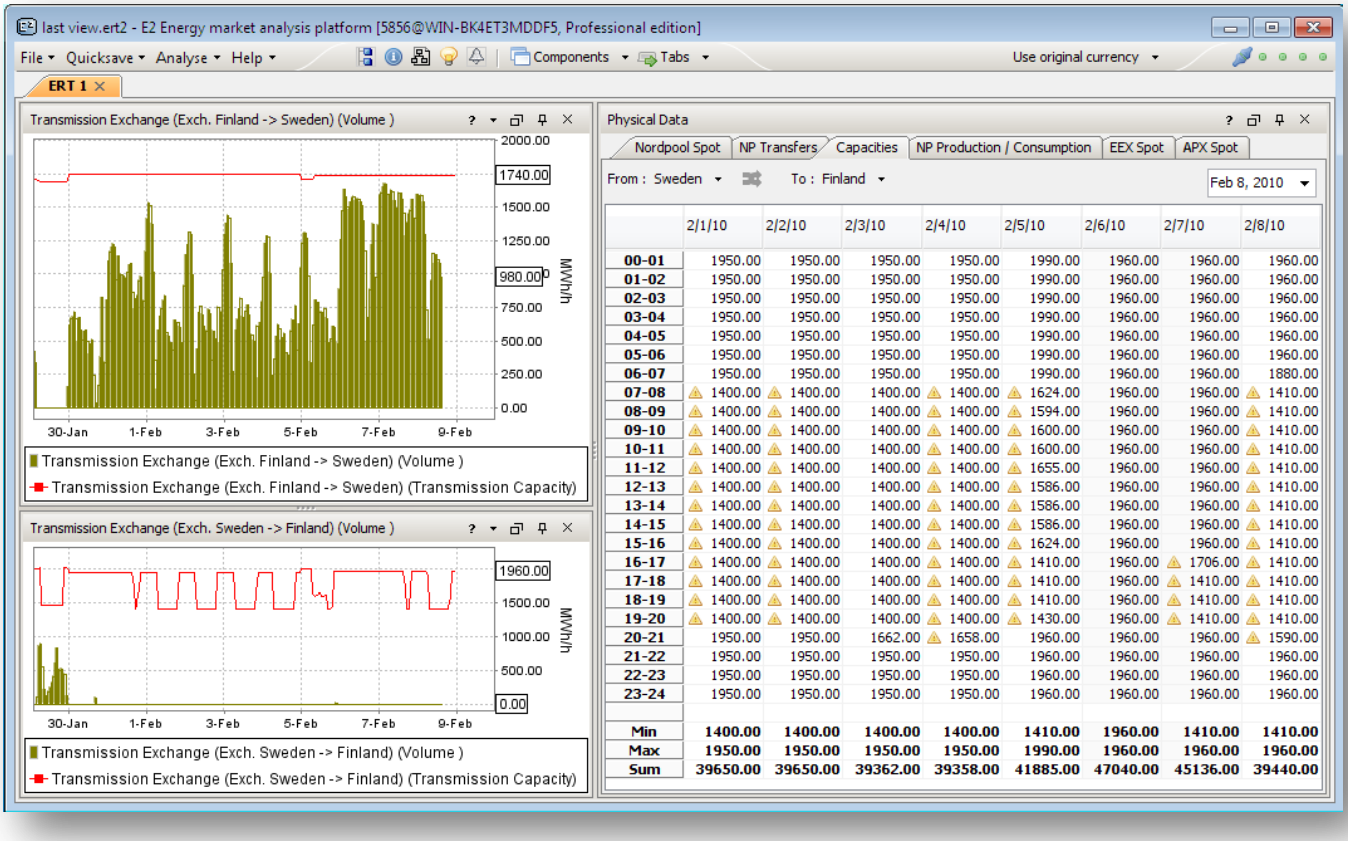
Most significant new data available are:

- Information on cable status and capacities
- Consumption forecast for the upcoming day.
- Sale, purchase and flow volumes from the spot market



- Danish wind production
- APX spot price

Information on Norned cable is also incorporated into Physical Data component under "NP transfers" identified as from/to "Netherlands".



	2/1/10	2/2/10	2/3/10	2/4/10	2/5/10	2/6/10	2/7/10	2/8/10
00-01	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
01-02	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
02-03	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
03-04	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
04-05	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
05-06	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
06-07	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1880.00
07-08	1400.00	1400.00	1400.00	1400.00	1624.00	1960.00	1960.00	1410.00
08-09	1400.00	1400.00	1400.00	1400.00	1594.00	1960.00	1960.00	1410.00
09-10	1400.00	1400.00	1400.00	1400.00	1600.00	1960.00	1960.00	1410.00
10-11	1400.00	1400.00	1400.00	1400.00	1600.00	1960.00	1960.00	1410.00
11-12	1400.00	1400.00	1400.00	1400.00	1655.00	1960.00	1960.00	1410.00
12-13	1400.00	1400.00	1400.00	1400.00	1586.00	1960.00	1960.00	1410.00
13-14	1400.00	1400.00	1400.00	1400.00	1586.00	1960.00	1960.00	1410.00
14-15	1400.00	1400.00	1400.00	1400.00	1586.00	1960.00	1960.00	1410.00
15-16	1400.00	1400.00	1400.00	1400.00	1624.00	1960.00	1960.00	1410.00
16-17	1400.00	1400.00	1400.00	1400.00	1410.00	1960.00	1706.00	1410.00
17-18	1400.00	1400.00	1400.00	1400.00	1410.00	1960.00	1410.00	1410.00
18-19	1400.00	1400.00	1400.00	1400.00	1410.00	1960.00	1410.00	1410.00
19-20	1400.00	1400.00	1400.00	1400.00	1430.00	1960.00	1410.00	1410.00
20-21	1950.00	1950.00	1662.00	1658.00	1960.00	1960.00	1960.00	1590.00
21-22	1950.00	1950.00	1950.00	1950.00	1960.00	1960.00	1960.00	1960.00
22-23	1950.00	1950.00	1950.00	1950.00	1960.00	1960.00	1960.00	1960.00
23-24	1950.00	1950.00	1950.00	1950.00	1960.00	1960.00	1960.00	1960.00
Min	1400.00	1400.00	1400.00	1400.00	1410.00	1960.00	1410.00	1410.00
Max	1950.00	1950.00	1950.00	1950.00	1990.00	1960.00	1960.00	1960.00
Sum	39650.00	39650.00	39362.00	39358.00	41885.00	47040.00	45136.00	39440.00

Figure – Keep your cursor on top of the triangular icon to read about the cable status.